

Title (en)
DRIVER CIRCUIT FOR LEDS FOR TIME-OF-FLIGHT CALCULATION

Title (de)
TREIBERSCHALTUNG FÜR LEDS ZUR BERECHNUNG EINER FLUGZEIT

Title (fr)
CIRCUIT DE PILOTAGE POUR LEDS POUR LE CALCUL DE TEMPS DE VOL

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Application
EP 12746042 A 20120712

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Abstract (en)
[origin: GB2492833A] The invention relates to an energy efficient electronic driver circuit for LED's or Laser Diodes for use in a Time of Flight (TOF) light source. In particular the invention relates to a boost converter circuit for use with a DC power supply for conversion of DC power to a pulsed current wave for driving a load such as LED's or Laser diodes. The boost converter comprises a DC terminal 101 for connection to a DC power source, a first inductance L1, a charge storage device such as a capacitor C2, in which the first switching means M1 and a second switching means (for example diode D1) is adapted to charge the storage device from the inductance at a first frequency. The boost converter also comprises a DC voltage to AC current converter circuit 107 comprising a second inductance L2 coupled to the charge storage device C2 and third switching means M2 for driving the inductance as a pulsed wave current source for the load at a second frequency, which is higher than the first frequency, preferably corresponding to the time of flight frequency. A fourth switch means M3 is incorporated for interrupting or disabling the current in the load. The boost converter operates by sensing the current in the load and employs a feedback loop to regulate and control the converter by PWM operation. The boost converter may be used in a range finding device adapted to determine the distance of an object by measuring light emitted by one or more of the LED or Laser diode light sources and measuring the reflected light source. The boost converter is adapted to update the PWM control before a measurement cycle. At the start of a new measurement cycle, the PWM signal for driving the DC-DC conversion is updated in response to currents observed during previous illumination periods.

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See references of WO 2013007787A1

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AT515160A1; EP3216322A4; WO2016073772A1; WO2021023544A1; WO2021213665A1; WO2019088974A1; JP2014508505A

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